



The

GARzette



The Official Newsletter of the Gwinnett Amateur Radio Society

March 2024 <http://www.gars.org/> Volume 51, Issue 3

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www.GARS.org

**Don't forget to support our
advertisers at the back of the
GARzette.**



**GARS January Exhibition of the
Technical aspects of Amateur Radio
Held at the Gwinnett County Fairgrounds**

**GARS Meeting: Antenna Modeling – Lee Johnson N4WYE
Tuesday March 12, 2024 at 7:00 PM**



President's Message

From the President...



Introduction

Since this is my first message as the new GARS president, I believe some introductions are in order for those that I have yet to meet in person or on the air. Radio-wise, I got my ticket back in 2022 though I had been looking into

amateur radio for many years before I finally decided to study and take my exams. Primarily, I enjoy portable operation especially Parks on the Air and Summits on the Air. When not activating, I enjoy tinkering with electronics, solder and building antennas (I find wrapping 49:1 ununs relaxing), and hunting for both SOTA and POTA. Outside of radio, I enjoy hiking, backpacking, and camping as well as cooking (specifically Texas-style brisket when the weather is nice).

I look forward to talking to many of you over the year either on the air or in-person.

2024 GARS Club Officer Election

Thank you everyone who re-electing those that ran again and thank for voting in another new officer, Glen Wendt (W3WWT) as treasurer.

Your 2024 GARS officers:

- President – Kevin Igarashi-Ball (W4KIB)
- Vice President – Alex Kowalchuk (AK4AM)
- Secretary – Bill Hawkings (WR1TR)
- Treasurer – Glen Wendt (W3WWT)
- Programs – Kevin Scott (K4GTR)

Coming up:

Technician HamCram March – Our education team and VE teams are partnering once again to host our first HamCram of the year. If you know anyone who would be interested in getting their

Technician license, please have them go to the [GARS website](#) to pre-register for the weekend course.



Dog Show Fundraiser March 27th-31st - This is our annual fund raiser for both GARS and Gwinnett ARES that will be coming up at the end of March. This fund raiser provides much needed funds for the club for all of our activities throughout the year as well as maintaining our equipment. It is a fun time for all and does not require a ton of work; mainly telling people where they can and cannot go and as a bonus, you get to see a diverse mix of people and dogs. Go ahead and save the dates and sign up here : [Dog Show Volunteer Signup](#)

Georgia QSO Party - While we attempted to bring Georgia QSO party last year, calendar conflicts led to us not being able to hold the event. Good news, we do not have those same conflicts this year and looking forward getting the club back on the air for the contest. While we are still working out the details, please keep an eye for updates on the [website](#) and the [Groups.io site](#) for signups and location details.

I look forward to an amazing year ahead of us and lots of chance to see everyone. Until then, 73.

Kevin W4KIB

Club President

GARS Repeaters and Other Communications

2 Meter Repeaters 147.075(+) MHz Tone 82.5 147.255(+) MHz Tone 107.2 1.25 Meter Repeater 224.580(-) MHz Tone 100.0, 1.6 MHz Offset 70 Cm Repeaters 444.525(+) MHz Tone 82.5 442.100(+) MHz Tone 100 442.325(+) MHz Tone 100	6 Meter Repeater 53.110 (-1 MHz) No Tone (Offline for Maintenance) Other Resources: <u>APRS</u> 144.390 -- 1200 Baud W4GR <u>D-STAR (WD4STR)</u> 145.060 + (1.4 MHz) 440.550 + (5 MHz)	6M Currently down 147.075 Operational in Snellville 147.255 Operational in Snellville 224.580 Operational in Grayson 442.100 Operational at Goshen Springs 442.325 Operational in Buford 444.525 Operational in Snellville Link remote receivers being added
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Notable Web Links

Ham Radio Glossary: <https://noji.com/hamradio/glossary.php> a very comprehensive listing provided by Noji Ratzlaff KNØJI. On his site there is also a lot of information about getting started in ham radio.

Need Help – Let GARS Elmers answer your questions

Send an email to elmers@gars.org with the subject listing the area (like Antennas, Repeaters, Digital, DMR etc.) of your query to get to GARS Elmer volunteers.

About the GARzette

The *GARzette* is the official monthly newsletter of the Gwinnett Amateur Radio Society, serving its members and other persons interested in the advancement of the Amateur Radio art.

Original articles, art, and photos are invited and encouraged. Previously copyrighted submissions cannot be accepted for reprinting unless permission from the appropriate publisher is provided in writing along with the information being submitted. If reprints are from publications allowing their unrestricted use, please include a copy of the printed permission contained in the publication.

If possible, bring your articles to the monthly meeting in Microsoft Word or rich text (.rtf) or text or HTML format or by e-mail to editor@gars.org. Artwork can be accepted in most any graphics format and can be submitted via e-mail to the same address. Alternate means of submittal can be arranged when necessary.

In keeping with the Amateur Radio spirit, permission is hereby granted for the reproduction of The *GARzette* articles by other Amateur Radio club newsletters provided that proper credit is given to the individual author and *The GARzette*.

The GARzette is published each month with the assistance of Karen KI4HPP and Kyle W4KDA who print copies for distribution at meetings, etc. and Dave Bruse, W4DTR, who distributes the newsletter electronically.

Deadline for submissions is the 28th of each month for inclusion in the following month's issue.

For additional information view our Website at: <http://www.gars.org> [PS— Articles to publish in the *GARzette*, either written by GARS members or published elsewhere, are always welcome. —Ed.]

Newsletter Email: editor@gars.org Editor: Bob Hoffmann, K4CQO

GARS Personalized Mugs for sale – Bits Print and Press



**Jolie
Dellaneve-
Brown,
KO4AHI**



<mailto:bitsprintandpress@gmail.com>

GARS Meetings & Workshops

GARS Meetings and Workshops are held in-person at the EAA 690 Hangar, 690 Airport Rd, Lawrenceville, GA 30046.

Meetings and Workshops are OPEN to all, feel free to share your invite with others.

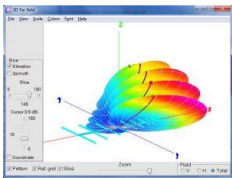
GARS Meetings Schedule (second Tuesday @ 7:00 PM): (these are the presentations)

- March 12 – Antenna Modeling – Lee Johnson N4WYE
- April 9 – TBD
- May 14 – TBD

Workshop Schedule (third Tuesday @ 7:00 PM): (these are the Hands-on Workshops)

- March 19 – Antenna Modeling – Lee Johnson N4WYE
- April 16 – TBD
- May 21 – TBD

GARS Meeting – March 12, 2024 Antenna Modeling



Lee was licensed in 1957 as KH6DAK, finished college in electrical engineering, and remained in communications technology/systems for his entire career. He is one of the founding members of the Raleigh Amateur Radio Society and built the original 04/64 W4DW repeater in the early 1970s. He is also a life member of the ARRL and IEEE.

Lee will introduce antenna modeling and techniques he has used over the last four years to design, analyze, and optimize his small antenna farm on a one-half-acre lot. Lee started with a 40M dipole in his attic, then ventured outside with an 80M Off-Center Fed (OCF) Dipole. Next came the End Fed Half Wave dipoles, both vertical and horizontal versions. Most recently, he has been operating with both 80 and 40-meter horizontal Loops. The modeling program, MMANA-GAL, allowed him to get the most performance out of his lot and HOA situation.

GARS Workshop – March 19, 2024

The workshop will be focused on using the tools discussed during the presentation.

Besides Antenna Modeling questions, feel free to bring any ham related questions you have including equipment setup and usage. We typically have 5 or more Elmers at each Workshop.

GARS would like to thank Kevin Scott, KA4GTR, for explaining how to use the KiCAD program for circuit board layout.



GARS Happenings

20 Years ago in the March 2004 GARzette:

- The GARS newsletter (GARzette) is not available for March 2004. However, all available GARzettes from 1994 can be found and browsed for your enjoyment from the GARS website.

You can always browse the GARzette archive at <http://www.gars.org/newsletters>. 73, Bob, K4CQO, GARzette Editor

GARS
GARzette

Health and Wellbeing – Sandy Jackson, KJ4DRO

Look for this resource on [Email](https://gars.org/contact/) (<https://gars.org/contact/>) and use it as a means to convey information about a GARS family member or Silent Key notification.

Net Managers Corner

Monday Night 2 Meter “Want, Swap, Sell, and Information Net”

GARS NEEDS MEMBERS TO SERVE AS NET CONTROL STATIONS!

GARS is a great Amateur Radio service club with the membership and awards to prove it. Our club is very busy and active, and we use the Monday night net to get timely information out to our members. Weekly participation is needed to make our net function well. There is only a small group of very dedicated people who make the net happen each week, and we need more members to volunteer to serve as Net Control Stations (NCS) on a rotating basis.

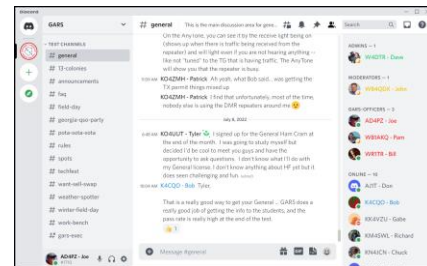
Out of almost 300 members, there are only five operators who serve as the NCS for the GARS net every Monday night. In no particular order, they are:

Ray – N4GYN David – KA4KKF Kevin – W4KIB Bill - WD4AMC Chuck – KK4TKJ

As GARS Net Manager (Chuck KK4TKJ), I would like to have more volunteers to fill NCS positions. I do plan and post the schedule months in advance. Any conditions will be accommodated that you as a rotating NCS need to place on the scheduling of your duties. If your plans change, I can make adjustments for the schedule to work, and I will make those changes happen as soon as I am notified of a problem. As Net Manager, I also send out reminders each week to let the NCS scheduled know he or she is NCS for the next Monday night net. In short, serving as a rotating NCS is a small duty but a great contribution to the club. The “Want, Swap, Sell Information Net” begins promptly at 19:30 every Monday night and runs about 30 minutes. As a scheduled NCS, you will request the assistance of a volunteer alternate NCS each time you have Net Control. Your simple duties will be to tune in to the GARS repeater, read the script, take a few notes and forward the information to me for record keeping.

Please lend a hand and contact (Chuck) via [Email](https://gars.org/contact/) (<https://gars.org/contact/>) to help support the effort that makes GARS the great club that it is. See you on the Nets!

Don't forget about our Discord utility for GARS announcements, news, activity spotting and more. See <http://www.gars.org> top of the home page. This is a sample of Discord. →



ARISS at the Liburn Elementary School

Lilburn Elementary School ISS Contact

A letter from Ralph Pickwick, KJ4CNC

Thank you to all the GARS members who listened in via live stream or direct downlink. I hope you all felt the excitement like we did being there.

I need to thank, specifically, a few GARS members who were important to the event. Earl Whatley was there for all four days during the setup. Most importantly he kept kids and teachers from sneaking in the gym door and stepping on the cables. Kevin Igarashi-Ball for helping with setup on Sunday then becoming the videographer for the live stream. Paul Kelley and Tom Crowley helped after the contact by participating in the STEM activities later that morning. And thank you to those GARS members that attended.

On a technical note, I received a lot of feedback from those who listened on the downlink, explaining that they picked up the astronaut before we did and heard her after we lost contact. There are many considerations that go into determining where to place the antennas for the contact. We are first limited by the length of our coax. The antennas needed to be placed within 100' of the radios. That placed our antenna between two buildings that we couldn't see over.

In closing I am always amazed at our amateur radio community and everyone's willingness to help. Student #15 asked his question when we lost our signal. An amateur in Pennsylvania caught the end of our communication and recorded the astronaut answering his question and her closing remarks to the school. We were able to share her response with the student before we left the school Wednesday.

Ralph Pickwick



Annual Dog Show needs GARS Volunteers

		
Lake Lanier Dog Show	March 27, 28, 29, 30, and 31	Wednesday – Sunday

This is an annual fundraising event for both GARS and Gwinnett ARES.

Location: Gwinnett Fair Grounds

Dates: March 27, 28, 29, 30 and 31 Wednesday-Sunday

Times, Two 4-Hour Shifts per Day: 6:00 AM - 10:00 AM **and** 10:00 AM - 2:00 PM

We need 12-15 volunteers per 4-hour shift each day.

Duties Provided:

- Parking fee collection at the Davis St parking lot. 3-5 volunteers
- Staff the various entrance gates, 2-3 volunteers, 4 sites
- Control the flow of traffic
- Control the No Parking and Unloading Only spaces
- Answer questions

Items to Bring:

- Weather-appropriate clothing it will be cold in the mornings.
- We typically have one rainy day.
- Yellow Safety Vest
- GARS Ball Cap (while supplies last, new volunteers will receive one)
- Flashlight or Head Light (sunrise approx 7:25 AM)
- 2m HT; Simplex 146.550 Primary
- Sunblock and chapstick
- [Camping chair](#)

Lunch Coffee and Donuts:

- A buffet-style lunch will be served
- Coffee and donuts will be provided

Loads of fun see the photos here

- <https://groups.io/g/GARS/album?id=285588>

Sign up [here](#)



Upcoming March Technician HamCram

GARS HamCram Technician License Classes

*Saturday, March 23, and Sunday, March 24
This is the entry-level license session*

For more information on the test session, [click here](#) to email the instructors.

STUDY GUIDE: We will be using the hamradioschool.com material.

CLASS: 8:00am to 4:00pm Saturday and 8:00am to 3:00pm Sunday

Thirty Minute Lunch Break with lunch brought in, both lunches and test for \$25.00

EAA hangar Briscoe Field Lawrenceville, GA near the intersection of highway 316 and Hi-Hope Road

[Click here for directions](#)

EXAM SESSION: 3:00pm to 5:00pm Sunday

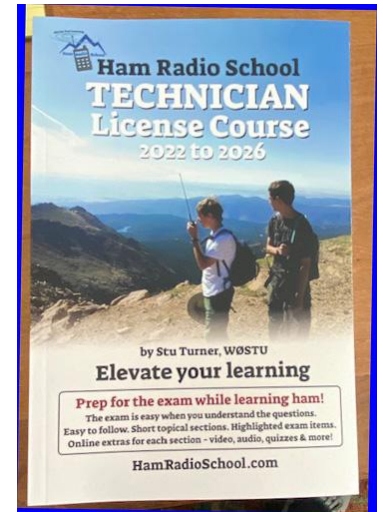
This exam session is a closed session only available to those students who sign up for the class.

REGISTRATION:

*** Pre-registration is Required ***

*** See registration in the sidebar ***

*** There is a no refund policy for no shows ***



GARS New Officers for 2024

Meet the GARS Officers elected for 2024

President – Kevin Igarashi-Ball, W4KIB



Vice President – Alex Kowalchuk, AK4AM



Treasurer – Glen Wendt, W3WWT



Secretary – Bill Hawkins, WR1TR



Program Manager – Kevin Scott, K4GTR



Vintage Radio Stories from Readers

Vintage Amateur Radio – Epilog

de Bill Shadid, W9MXQ



Writing articles about Vintage Amateur Radio has certainly had its positives – and as they become more numerous, the return comments are growing. And that makes the entire process even more fun. Here are three items with a story to tell about each.

First Story.

An upgrade to the Drake PS7 AC Power Supply.

Recently, good friend and fellow appreciator of Vintage Amateur Radio equipment, Bill Schnell, AC9JV, came up with a question that I am frequently asked by other collectors.

Like me, AC9JV is an appreciator of Drake amateur radio equipment – we discuss the brand almost anytime we are talking about collecting. Bill often operates his Drake TR7 and TR-4 Transceivers. Like many Drake fans, Bill was looking for a fan to install instead of the now rare Drake FA7 Fan unit. The FA7 was optional on the following products:

- Drake TR7 Transceiver – optional cooling fan for continuous duty operation
- Drake TR7A Transceiver – optional cooling fan for continuous duty operation
- Drake TR5 Transceiver – optional cooling fan for continuous duty operation
- Drake PS7 Power Supply – optional cooling fan for continuous duty operation
- Drake DL-1000 Dummy Load – optional for full power (above 300 watts) output being tested under load

The Drake FA7 fan is no longer available and is often worn out or noisy when found removed from a Drake product. Even a brand new (NOS) FA7, at its best was a somewhat noisy product. Bill was asking if I had a recommendation for a suitable replacement. Having restored quite a few Drake items using the FA7 Fan, I did provide AC9JV a recommendation. For those of you with any of the products listed above, I recommend this replacement that I found on Amazon:

**AC Infinity AXIAL 8038, Quiet Muffin Fan, 120V AC 80mm x 38mm Low Speed,
UL-Certified for DIY Cooling Ventilation Exhaust Projects**

Here is a picture of the fan:



	3.2" x 3.2" x 1.5"
Item Dimensions	L x W x H
Cooling Method	Air
Noise Level	28 dB

Screws that come with the fan are too large. I used 4-40UNC x 2" Pan Head Phillips Head Screws to fit the thread inserts in the Drake units.

The cord is a plug-in type that has a traditional 2-wire plug on the end. But the 48" cord length is far too long. So, I purchased DIY molded two wire plugs to plug into the 120-volt outlet installed on Drake

equipment. An exception to that advice is for use with the DL-1000 Dummy Load. For that application I use the full cord length. I might also add that the plug provided on the supplied AC cord shipped with the AC Infinity fan will not work with the non-polarized chassis socket in the Drake products mentioned.

Here is Bill's installation on the back of his recently acquired Drake PS7 AC Power Supply:



Note that Bill used the OEM technique Drake used to install short machine screws to fasten the fan to the chassis.

Bill has cut the 48" cord short and installed the white DIY, two wire plug that is installed into the pre-wired socket on his PS7 Power Supply.

Bill has also carefully controlled the wire placement by installing a cable tie at the upper right-hand corner (in the picture) of the fan. In fact, Bill used cable ties to fasten the grill to the fan – perfectly acceptable.

AC9JV Photo

The fan goes in place of a panel installed by Drake when no fan was present. Good work, Bill – it looks nice.

That heavy gray wire you see at the left side of Bill's picture is the main 12VDC feed line to the TR7 Series or TR5 Transceiver. It is hard wired into the back of the PS7.

I have done many installations of the AC Infinity fan, but I thought it would be good to show you a Drake FA7 installation done with a NOS Drake branded FA7:



Drake FA7 Fan installed on a TR7 Transceiver

Note Drake installed power-lead to molded non-polarized plug on cord.

W9MXQ Collection

The AC Infinity is significantly quieter than the FA7 in all Drake installations. AC Infinity also sells an AXIAL 8025 fan that has the same dimensions but provides an increased air flow (and more noise) than the one mentioned above. The AXIAL 8038 discussed above has a 28 dB noise level while the

8025 has a 32 dB noise level. I recommend the 8025 and use it currently on the Drake DL-1000 Dummy Load that resides in my collection. The DL-1000 needs all the air flow that can be provided when running near its power limit.

Second Story.

A Collins KWM-2 Transceiver and a few notes about its former owner.

This short story goes back to an article written for the January 2018 Edition of the Ozaukee Radio Club Newsletter*. It covered the Collins KWM-2 and KWM-2A Transceiver. The article correctly credited that product as being the first successful move to putting a transceiver in every ham shack. The star of that article was a KWM-2A in my radio collection.

At the end of a slight rewrite of the 2018 article, I related that I would be remiss if I left out another Collins KWM-2 that is in my radio collection. This set, including a KWM-2 Transceiver, 312B-5 Remote VFO/Station Console, and 516F-2 AC Power Supply came to me from a local friend, Paul, W9SIZ. Paul, who is still active on the HF bands is a World War II veteran. Most particularly, Paul is a veteran of the Battle of Normandy – the D-Day invasion of Nazi Germany's "Fortress Europe." As we all know now, that signaled the beginning of the end of Nazi Germany's occupation of Europe. Paul was storming the beaches at Normandy that fateful day – 6 June 1944 – almost 77 years ago.

Here is a picture of this beautiful station – looking every bit the same today as it did when brand new – needing no apologies for time:



Collins KWM-2 HF Transceiver

With Collins 516F-2 AC Power Supply and 312B-5 Remote VFO

W9MXQ Shack Photo

This complete station was purchased in 1961 at Amateur Electronic Supply, Milwaukee. As I can determine from my records, it was in the first 1,100 KWM-2's built, in 1960. It was late in that production that included all KWM-2 units and just 5 KWM-2A units. Production was at the Collins facility in Anamosa, Iowa, about 30 miles from the Cedar Rapids corporate home of Collins Radio Company. To me, the historic value of this radio and its owner are especially important and are prime reasons for its collector value.

Paul, W9SIZ, is an accomplished CW operator so perhaps I am the first person to seriously use this radio on SSB. As I have mentioned before, serious CW operation with the KWM-2 and KWM-2A required the use of the 312B-5 Remote VFO. That was likely well known to Paul when he purchased this station.

Paul is the uncle of Tim Broppe, KA9EAK (SK). Tim, of course, was a member of Ozaukee Radio Club until his untimely passing. Paul is also a member of the Washington County Amateur Radio Club. Friends in common with W9SIZ are Gary, K9DJT and Gary, W9XT and likely among many others in

*Bill's articles were first published in the Ozaukee Radio Club (W9CQO) ← note the resemblance [Ed, Bob, K4CQO]

the clubs mentioned. Gary, W9XT, first introduced me to Paul.

The KWM-2 and 312B-5 Remote VFO in the above picture is an early model from the KWM-2 and KWM-2A product line. The newer model, shown in the picture below, was the subject of the article in January of 2018. See more detail below of model differences.



Collins KWM-2A HF Transceiver in the Original Article

With Collins 312B-5 and 30L-1 Linear Amplifier – and Heathkit HA-1410 Keyer
W9MXQ Shack Photo

My original KWM-2A, 312B-5 and 516F-2, from the January 2018 article came to me via another friend, a veteran of the United States Marines, Phil, KC9CI. Phil is one of the first ham radio operators that I met when moving to Wisconsin, 23 years ago – and remains a close friend. The 30L-1 Linear Amplifier has been a part of my collection of Collins equipment for many years.

To those of you students of Collins history, note some obvious differences in these two Collins KWM-2 stations. (Obvious, that is, if you know where to look!)

1. The KWM-2 in the recently acquired station (first one shown) is an early version of the first KWM-2 released in 1961. You can tell by the “wings” on the Collins emblem just above the readout. Also, early KWM-2 and KWM-2A Transceivers did not have the finger hole in the main tuning knob. This KWM-2 was one of 1,094 units made in 1960.
2. The KWM-2A in my original 2018 article (second one shown, above) still has the winged emblem but is later in that it has the finger hole in the main tuning knob. This KWM-2A was one of 313 made in 1963.
3. Note that the 312B-5 Remote VFO/Station Console in the first station shown also has the winged emblem and the original main tuning knob without the finger hole.
4. The 312B-5 Remote VFO/Station Console in the second picture shown has the later round Collins emblem and the finger hole in the main tuning knob.
5. Like the other parts of the station, the first picture shows an original edition, winged emblem 516F-2 AC Power Supply.
6. The 516F-2 AC Power Supply for the second station shown is not in the picture but it is a later edition, round emblem unit.

Another detail item for reference in looking at the two KWM-2 transceivers (KWM-2 first, then the KWM-2A) is a collector related item giving away a KWM-2A. The KWM-2 (not 2A) has 14 bandswitch position for which the user can choose 200 kHz wide bands in essentially anywhere between 3.5 and 30 MHz. By contrast, the KWM-2A is different in that it has a two-level bandswitch. That is, by turning a switch just above the BAND switch on the KWM-2A, the user can select for an additional 14 positions.

Now for the most obvious – if you look carefully – difference between the KWM-2 and KWM-2A. Look at the two knobs at either side of the main dial readout. The one on the left is the EXCITER TUNING and the one on the right is P.A. TUNING. These controls tell a story about most KWM-2 or KWM-2A units. You can see that the legend above the knobs on the KWM-2 is less pronounced than the same legend on the KWM-2A. This difference, known to collectors as “eyebrows” on the KWM-2A, merely hints at the extra 14 band positions which may well be outside the carefully marked ham bands. Many,

if not most, KWM-2A units went to military and/or commercial users who would operate in other parts of the high-frequency spectrum. Similarly, KWM-2 units were made for the ham radio market. At the end of the product's life cycle, only the KWM-2A was produced.

One caveat on the above is that Collins offered a conversion kit to change the KWM-2 into a KWM-2A. This conversion supplied a new Tuning Dial Escutcheon showing the "KWM-2A" model number and a new switch panel and internal parts to add the two level bandswitch. It did not include a new front panel with the "eyebrows." So, a KWM-2A without the "eyebrows" is proof of a KWM-2 that has been converted to a KWM-2A.

Third Story.

Vacuum Tubes – especially RF Power and Sweep Tubes – Not an endless supply.

The third item is just a note relating to a lot of comments from users of vacuum tube radios, including right up to the hybrids with vacuum tubes only in the driver and final amplifier circuitry.



Receiving Tubes



Transmitting Tube

Several readers have written that they are wondering where to find sweep tube finals (6HF5, 6JB6, 6LQ6, 6KD6, etc.), traditional tetrode transmitter tubes (6146, 6146A, 6146B, 807, 6550, etc.), high-power glass high power transmitting tubes (572B, 3-400z, 3-500z, 4-400A, 3-1000z, etc.), and ceramic tubes (8122, 4CX-250B, 8877, etc.).

My advice is that if you have a tube transmitter then you need to invest now in spare tubes. Many of the above tubes are now available only from China² and Russia¹. While some of those coming from good North American distributors are tested and guaranteed, others are not so high in quality. Sweep tubes are becoming hard to find – and even when available they may not be available in matched sets as needed.

Many tubes from North American distributors carry dependable warranties but remember that vacuum tube warranties are based on purchase date – not in-service date. Any tubes purchased for spares should be tested immediately upon receipt and stored only after you know they are working. I rotate spare tubes in my linear amplifiers just to be sure they are heated up and used occasionally².

At this time, my comments about vacuum tubes do not generally apply to receiving tubes., Even there, beware of tubes found of value by the audiophile group – that has inflated some receiving tube prices to stratospheric levels³.

A bit of extra information here – only one of the popular sweep-tube equipped transceivers from the 1970's seemed to foresee the future shortage of matched tubes. Hallicrafters, in their 1972 release of

the SR-400A Cyclone III Transceiver was equipped with one of the most powerful sweep tubes offered, the 6KD6 Tetrode. The SR-400A Cyclone III is here:



Hallicrafters SR-400A Cyclone III HF Transceiver

Shown with PS-500A-AC AC Power Supply/Speaker and HA-1 Electronic Keyer
W9MXQ Shack Photo

The SR-400A Cyclone III had internal circuitry to match most any two 6KD6 final amplifier sweep tubes – regardless of brand, age, or most other factors. This was a rather revolutionary feature and not repeated elsewhere to my knowledge. The similar SR-400 Cyclone and the SR-400 Cyclone II predecessors with their 6HF5 final amplifier sweep tubes did not share the feature.

Attempts to implement this tube matching technology to other sweep tube equipped transmitters and transceivers would seem to have some merit. Readers also should note that tube failures in final amplifiers are rare if the radio is operated correctly⁴.

I collect these short stories on the ongoing collecting and restoring of Vintage Ham Radio Equipment. Occasionally, it is nice to share a bit of the experience. The basic text for the next article like this one is already written – I am just looking for a few more stories.

I appreciate that you read my articles. Remember that I am open to questions and comments anytime at my email address, W9MXQ@TWC.com.

A special note of thanks to my proofreader, Bob Bailey, W9DYQ. Bob is a lot more than a proofreader as he often adds commentary that makes it into the article. Bob and I work to collect and restore many examples of Collins, Drake, Hallicrafters, National, RME, Swan/Cubic, Ten-Tec, and some of the Japanese products of historic and/or personal importance.

Notes and Comments:

¹ The sources found in Russia (Svetlana, Sovtek, and others) are quite good and many times made using tooling formerly at RCA, GE, Raytheon, and other well-known brands. Chinese tubes are tied to the quality and reputation of the importer. “Let the Buyer Beware!!” As an importer of goods from many countries, I am aware that offshore sources in the third world are not necessarily competent and technically knowledgeable and are dependent on the North American or European distributor to set and enforce technical specifications. This sadly does not bode well for the American buyer who is totally drawn by price.

² Readers needing vacuum tube sourcing advice can feel free to send a note requesting up to date information on sources. Write to W9MXQ@TWC.com – remembering that such advice is not guaranteed!!

³ There is a good side to this as well – many audiophile tubes are being produced new, today, due to this new demand.

⁴ There is good reason to be confident in the life of final amplifier tubes in vacuum tube radios. One item in my collection is a Swan 500cx using a pair of 6LQ7/6JE6 final tubes. The former owner of this radio, now a SK, was a friend – and I remember his Swan 500cx purchase, brand new, in 1972. This radio was operated daily for over nearly 45 years with its original final amplifier tubes at 550 watts PEP input. I use it with those same tubes today and net a power output of just over 275 watts – and are capable of much more if pushed a bit. Similarly, a Hallicrafters SR-400 Cyclone II Transceiver in my collection has its original Hallicrafters branded 6HF5 final amplifier tubes operating at 400 watts PEP input. To this day, these tubes net well over 200 watts output – but are loaded to about 200 watts output in operation. (Hallicrafters branded tubes were not sold by dealers – so it is an easy way to determine if a tube found in an old Hallicrafters radio is original.)

W9MXQ



GARS Membership

New Members in January

Carl Henderson (KQ4NUY)

New Members: 1

**Total Members as of
March 1, 2024
349**

Birthdays in March

Rick Baker (KO4RWY)
Jonathan Baldwin (N4BRJ)
John Bojack (N0HRM)
Dave Bruse (W4DTR)
Steven Delaney
Lynn Hatker (W4SHT)
Jim Hawkins (KF4RX)
Suzanna Hoefler
Jerry Hundley (K4IT)
Kevin Igarashi-Ball (W4KIB)
Robert Lopez (KN4NSP)
Don Martini (KM4BWT)
Kyle Scott (KN4UWV)
Madai Similao
Mike Smith (KK4KHS)
Tom Tcimpidis (K6TGT)
Carolyn Thigpen (KD4ZPM)
Brent Woodman (N2BAB)
Ed Woodrick (WA4YIH)

Join GARS members for our:

- weekly lunch bunch at 11:30 AM most Fridays
- weekly breakfast gathering at 8:00 AM most Saturdays



Both weekly gatherings are held at The 5 Spot at:

The 5 Spot restaurant
[555 Progress Center Ave, Lawrenceville, GA 30043](https://www.the5spot.com/)

Note: The 5 Spot is changing ownership and will close for 3 weeks of renovations on 3/16/24. GARS Friday lunch on 3/15/24 will be the last lunch gathering in March.

GARS MEMBERSHIP

Your current GARS membership status is shown in the monthly newsletter e-mail towards the bottom of the message. To become a GARS member, or to renew your GARS membership, please visit our website – <http://www.gars.org>. To make changes to your GARS membership (moved, new e-mail address, new phone number, etc.), please contact the Membership Chair at [Email \(https://gars.org/contact/\)](mailto:membership@gars.org) with any changes to your Membership information.

Membership Chair: Karen Albritton, KI4HPP **Committee Members:** Dave Bruse, W4DTR

ARRL MEMBERSHIP

To update your ARRL membership information, please visit their website - <http://www.arrl.org>.

MAINTAIN YOUR LICENSE

You can update your Amateur Radio license information with the FCC at their website for free - <https://www.fcc.gov/wireless/universal-licensing-system>. License renewal is subject to the \$35 FCC fee.



Donating to GARS

Your GARS donation can be used for a certain purpose by donating to one of these funds:

- GARS SK Memorial Fund for Education
- (to remember and honor Silent Keys);
- GARS Scholarship Fund (Administered by the ARRL for awarding scholarships);
- GARS General Fund (any club purpose).

GARS has joined these rewards programs (a portion of every purchase you make through these merchants may be donated to GARS):

- Kroger Community Rewards program.

For more information on how to sign up for these rewards programs, or to donate to GARS, visit

<http://gars.org/gars/donations-to-the-club>

GARS on Social Media



Discord Request:

<http://gars.org/discord>



Groups.io:

<http://gars.org/groups.io>



Visit GARS on Facebook:

<http://gars.org/facebook>



Follow GARS on Twitter:

<http://gars.org/twitter>



Join GARS on YouTube:

<http://gars.org/youtube>

GARS Mail Address:

GARS
P.O. Box 492531
Lawrenceville, GA 30049

Officers



Kevin Igarashi-Ball, President W4KIB



Alex Kowalchuk, Vice President AK4AM



Bill Hawkins, Secretary WR1TR



Glen Wendt, Treasurer W3WWT



Kevin Scott, Program Manager K4GTR

Managers and Committee Chairs



Karen Albritton, Membership Chair KI4HPP



Dave Bruse, VE Team Leader W4DTR



David Adcock, Webmaster, Field Day Chair, TechFest Chair KA4KKF



Ralph Pickwick, Education Chair KJ4CNC



Earl Whatley, Apparel Manager AF4FG



Bob Hoffmann, GARzette Editor K4CQO



Eddie Foust, Repeater Chair WD4JEM



Mike Weathers, WAS / DXCC QSL Card Checker and Historian ND4V



Chuck McCord, Net Manager KK4TKJ



Steve Back, Technical / RFI Advisor WB2OGY



Dallas Mellichamp, Workshop Leader N4DDM



Sandy Jackson, Health and Wellbeing KJ4DRO



Kevin Igarashi-Ball, Multimedia Chair W4KIB



Dallas Mellichamp, Georgia QSO Chair N4DDM



Neil Derryberry, Elmer Manager WD4NET



Open Winter Field Day Chair

Directors and Trustees



Joe Biddle, AD4PZ



Kyle Albritton, W4KDA



John Davis, WB4QDX



Bill Cherepy, WB4WTN W4GR Trustee



GARS Meeting Minutes

GARS – MEETING 2/13/2024

There were 37 in-person attendees

President Joe Biddle (AD4PZ) opened the meeting at 7:00 p.m. and closed the meeting at approximately 8:35 p.m.

New hams and visitors: Joe (AD4PZ)

- First time visitors recognized.
- New hams and upgrades recognized.
- Introductions all around.

Treasurer Report: Joe (AD4PZ)

Education: Joe (AD4PZ)

- ARISS Amateur Radion in the International Space Station contact at Lilburn Elementary last week. The ARISS event was live streamed. Thank you from Ralph (Copy from recording)
- Joe read a letter from Ralph Pickwick – see letter ARISS at the Liburn Elemantary School

Education Chairman

VE Team: Bob (K4CQO)

- This Month we had 4 techs and 2 general exams passed.
- Going forward testing will be on the 3rd Sunday of each month.

ARES: Hal (W4IGE)

- Last month Kevin (K4KIB) did a presentation on DIY Lithium Ion battery packs. The slides are on the ARES site.
- This month's program will be on packet.
- Deployment day will be coming up this spring. Deployment day is a day of field practice.
- The ARES trailer has been rejuvenated.

Programs: Kevin (K4GTR)

- March – Antenna modeling Lee Johnson (N4WYE)
- If anyone wants to give a presentation on starter antennas or any other topic contact Kevin (K4GTR)

Apparel: Earl (AF4FG)

- We have a full zippered hoodie for \$35. In red only.

Repeaters: David (KA4KKF)

- There is white noise on one of the linked receivers and we need a work party on a Saturday to clean out the shack and put up a new antenna. If you're interested, email Dave at ka4kkf@gmail.com. As soon as the weather is good the workday will be announced on the Monday net. David also asked for a tower climber.

Techfest: David (KA4KKF)

- We need to start Techfest committees ASAP.
- A new committee chair is needed. If you are interested, please let David know in person or by email.
- We did well but costs were higher this year because we had to purchase all of the prizes as well as pay the fairground fees.

Dog Show: David (KA4KKF)

- Ralph is the lead on the Dog Show.
- March 28 – 31
- Sign up on the web site.
- We do 4 hour shifts, and the work is generally a matter of traffic control. We get breaks and the hosts feed us well.
- The dog show is significant fund raiser that pays for field days and other events. Half of the proceeds goes to ARES.

Other: Joe (AD4PZ)

- David (KA4KKF) announced that there will be a Technician Ham Cram is coming up March 23-24 at the hangar.

Officer Elections – Joe (AD4PZ)

As per the bylaws, Joe asked if anyone else was interested in running for any of the club officer positions. There were no responses. Earl announced the Nominees:

- President - Kevin Igarashi-Ball
- Vice President - Alex Kowalchuk
- Secretary - Bill Hawkins
- Treasurer – Glen Wendt
- Program Manager - Kevin Scott

Earl proposed that the five be accepted and the slate was approved by majority acclamation.

Program: Surface mount technology – Part 2 KiCAD - with Kevin (K4GTR)

Minutes prepared by club secretary Bill Hawkins (WR1TR).

Workshop Minutes - February 20, 2024

Number in Attendance: 10

Workshop Topic: DIY PCB Layout Using KiCAD

Presenter: Kevin Scott K4GTR

Brief Summary: Kevin's KiCAD presentation went a little long so he had to finish it at the Workshop and then he went into how to use KiCAD to layout a simple Audio Amplifier PCB that could drive a few headphones at Field Day or the GA QSO Party.

Dallas brought in some KiCAD files that demonstrated cross-probing from the schematic to the PCB layout and how to view the PCB files in 3D.

Editors note: KiCAD 8.0.0 was released on Feb 23rd KiCAD EDA is a Cross Platform and Open Souces Electronics Design Automation Suite, <https://www.kicad.org/>

Elmers are always present at the GARS Workshops. Feel free to bring your questions to the Workshop and if your project is small enough to bring to the meeting, let us know in advance via email so we can bring tools, test gear, etc.



Events – GARS and others

ARRL CONTESTING INFO

From ARRL Contest Calendar

> For more information click the links <

2024 January

1 [Straight Key Night](#)

6 [Kid's Day](#)

6-7 [RTTY Roundup](#)

20-22 [January VHF Contest](#)

February

12-16 [School Club Roundup](#)

17-18 [International DX – CW](#)

March

2-3 [DX Contest – SSB](#)

April

21 [Rookie Roundup – Phone](#)

May

No planned contests

June

1-2 International Digital Contest

8-10 [June VHF](#)

15 [Kid's Day](#)

22-23 [Field Day](#)

July

13-14 [IARU HF World Championship](#)

August

3-4 [222 MHz and Up Dis Contest](#)

17-18 [10 GHz & Up – Round 1](#)

18 [Rookie Roundup – RTTY](#)

24-25 [EME - 2.3 GHz & Up](#)

September

14-16 [September VHF](#)

21-22 [EME - 2.3 GHz & Up – Rnd 2](#)

21-22 [10 GHz & Up – Wknd 1](#)

October

19-20 [EME - 50 to 1296 MHz](#)

21-25 [School Club Roundup](#)

November

2-4 [Nov. Sweepstakes - CW](#)

16-17 [EME - 50 to 1296 MHz](#)

16-18 [Nov. Sweepstakes - Phone](#)

December

6-8 [160 Meter](#)

14-15 [10 Meter](#)

22 [Rookie Roundup-CW](#)

For more information:

<http://www.arrl.org/contest-calendar>

HAMFEST CALENDAR

[Please confirm the status of a Hamfest before making plans to attend]

03/08/2024 - 03/09/2024 [54th Annual Playground ARC Hamfest](#)

Location: Fort Walton Beach, FL

Type: ARRL Hamfest

Sponsor: Family Eye Care, NWFL Ham Radio

Website: <https://w4zbb.org/hamfest-2/>

03/09/2024 - [Flamingo Net Flea at U. of Miami](#)

Location: Coral Gables, FL

Type: ARRL Hamfest

Sponsor: Flamingo Net

Website: <http://FlamingoNet.8m.net>

03/16/2024 - [49th Annual Stuart Hamfest, ARRL Southern Florida Section Convention](#)

Location: Stuart, FL

Type: ARRL Convention

Sponsor: Martin County Amateur Radio Association

Website: <http://www.stuarthamfest.com>

03/23/2024 - [Zephyrhills Area Amateur Radio Club Tailgate](#)

Location: Zephyrhills, FL

Type: ARRL Hamfest

Sponsor: Zephyrhills Area Amateur Radio Club

Website: <https://www.zaarc.org>

04/13/2024 - [Tampa ARC Hamfest](#)

Location: Tampa, FL

Type: ARRL Hamfest

Sponsor: Tampa Amateur Radio Club

04/27/2024 - [Calhoun GA Hamfest](#)

Location: Resaca, GA

Type: ARRL Hamfest

Sponsor: Cherokee Capital Amateur Radio Society

Website: <http://www.k4woc.com>

04/27/2024 - [Mobile Hamfest](#)

Location: Mobile, AL

Type: ARRL Hamfest

Sponsor: Mobile Amateur Radio Club

Website: <http://w4iax.net/>

04/27/2024 - [Savannah Area Swap Meet Hamfest](#)

Location: Savannah, GA

Type: ARRL Hamfest

Sponsor: Coastal Amateur Radio Society

Website: <https://coastalamateurradiosociety.net/wpW4LHSblog/>

For more information: www.arrl.org/hamfests-and-conventions-calendar

When searching by division, remember some states adjacent to GA are in different divisions: Southeastern: GA, AL, FL Delta: TN Roanoke: NC, SC



GARS Events Calendar for 2023		GARS Recurring Calendar
TechFest Winter Field Day Spring Technician HamCram Dog Show Fundraiser Georgia QSO Party North metro area Fox Hunt Summer General HamCram Memorial Day Parade ARC/KARC Hamfest Field Day JOTA Fall Technician HamCram Stone Mt. Hamfest Holiday Party	January 13 2024 January 27-28 2024 March 23-24, 2024 March 5-6 2024 April 13-14 2024 April 2024 April 2024 May 27 2024 June 1 2024 June 22-23 2024 October 2024 September 2024 November 2-3 2024 December 7 2024	<ul style="list-style-type: none"> 2nd Tuesday of the month at 7 pm (except December) Monthly Club Meeting 690 Airport Rd, Lawrenceville, GA 30046 3rd Tuesday of the month at 7 pm (except December) Monthly Workshop 690 Airport Rd, Lawrenceville, GA 30046 3rd Sunday of the Month at 2 pm GARS Ham Exam Session 690 Airport Rd Lawrenceville, GA 30046 Every Monday at 7:30 pm: GARS Want, Swap, Sell, and Information Net on the GARS 147.075 MHz repeater Every Monday at 8:30 pm: ARES Training on the GARS 147.075 MHz repeater Every Friday at 11:30 am, GARS Lunch at The 5 Spot Every Saturday at 8:00 am GARS Breakfast at The 5 Spot

GARS Calendar for March 2024

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1 11:30 AM Lunch at The 5 Spot	2 8:00 AM Breakfast at The 5 Spot
3	4 7:30 – 8:00 PM 2M Net	5 7:00 PM Exec Meeting	6	7	8 11:30 AM Lunch at The 5 Spot	9 8:00 AM Breakfast at The 5 Spot
10	11 7:30 – 8:00 PM 2M Net	12 7:00 PM Meeting EAA 690 Hangar	13	14	15 11:30 AM Lunch at The 5 Spot	16
17 2:00 PM GARS Ham Radio Exams, EAA 690 Hangar	18 7:30 – 8:00 PM 2M Net	19 7:00 PM Workshop Meeting EAA 690 Hangar	20	21	22	23 Technician HamCram EAA 690 Hangar
24 Technician HamCram EAA 690 Hangar	25 7:30 – 8:00 PM 2M Net	26	27	28	29	30
31						

Local Ham Radio Exams & Meetings

GARS Ham Radio Exams

Beginning in March, GARS will march to the 3rd Sunday of the month

Preregistration is **REQUIRED**

Doors open at 1:45pm, exams start promptly by 2:00pm

For more information and to preregister, please visit <https://gars.org/exams/>

GARS VE-Team

VEC: W5YI-VEC

EAA 690 Hangar

690 Airport Rd

Lawrenceville, GA 30046

GARS VE Team Leaders

E-mail: exams@gars.org.



February 2024 Results

The GARS VE Team had a great exam session on February 11th.

4 New Technicians

- Elijah M Gregg KQ4OSV
- Joseph Gress KQ4OSU
- Leonard Johns KQ4OSW
- Robert St James KQ4ORV

2 Upgrade to General

- Jacob North KO4SZA
- Mark Vogt KQ4GEL

Special thanks to the Volunteer Examiners who made this exam session possible:

W4DTR – Dave (CVE)

K4CQO – Bob (CVE)

KK4TKJ – Chuck (CVE)

AB4QQ – Russell

KM4SWL – Richard

W4SHT – Lynn

Thanks & 73,

Dave Bruse, W4DTR (CVE)

GARS Exam Team Leader

Local Ham Radio Exams

In order to find an exam session near you, please visit http://www.arrl.org/exam_sessions/.
Contact the information in the listing for further information.



Local Ham Radio Meetings

In order to find a local Ham Radio Club meeting near you, please visit <http://www.arrl.org/find-a-club>. Contact the club for meeting information.





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